

PATENT ABSTRACTS OF JAPAN

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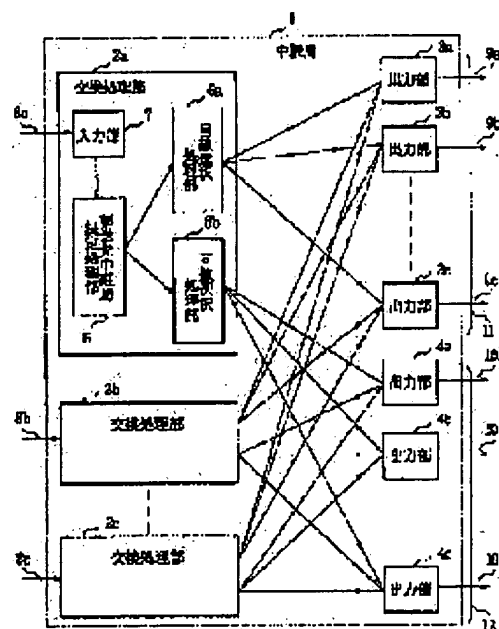
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(54) PACKET SWITCHING REPEATING SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To improve the throughput by decentralizing a transfer process for packets.

SOLUTION: A transfer destination repeating station determining process part 5 of a switching process part 2a determines whether the repeating station at the transfer destination of a packet 20 received from an input-side communication line 8a is a repeating station connected to a line bundle 11 as a set of communication lines 9a-9c as plural output lines or a repeating station connected to a line bundle 12 as a set of communication lines 10a-10c as plural output lines according to the destination address of the packet 20. Line selecting process parts 6a and 6b of the switching process part 2a select one communication line with a small load out of the communication lines 9a-9c and communication lines 10a-10c connecting with the repeating station. Switching process parts 2a-2c having the same function with the switching process part 2a and the switching process parts 2a-2c performs decentralized processes in parallel as to the transfer process for packets.



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CLAIMS

[Claim(s)]

[Claim 1]A relay station of the destination of said packet is determined based on a destination address of a packet which received via two or more communication lines of an input side, respectively, In a packet-switching relay system which furthermore chooses a communication line with little load among two or more communication lines between said relay stations, and equalizes and uses output load of said packet in two or more communication lines between said relay stations, A packet-switching relay system provided with two or more means to determine a relay station of the destination of said packet and to choose a communication line with little load among said communication lines.

[Claim 2]A relay station of the destination of said packet is determined based on a destination address of a packet which received via two or more communication lines of an input side, respectively characterized by comprising the following, A packet-switching relay system which furthermore chooses a communication line with little load among two or more communication lines between said relay stations, and equalizes and uses output load of said packet in two or more communication lines between said relay stations.

A relay station of the destination of said packet is determined based on a destination address of a packet which received from a communication line of said input side, A destination relay station decision processing means by which two or more preparations and said message-exchange means determine a relay station of the destination of said packet for a message-exchange means to choose a communication line with little load among two or more communication lines between said relay stations furthermore, based on a destination address of said packet which received.

A circuit selection processing means which chooses a communication line with little load among two or more communication lines between said relay stations.

[Claim 3]A packet-switching relay system characterized by a certain thing in the packet-switching relay system according to claim 1 or 2 only the number of communication lines of plurality [number / of said message-exchange means] of an input side.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the packet-switching relay system which chooses an output line so that the frequency in use of each circuit may be equalized, when especially between relay stations comprises two or more circuits about a packet-switching relay system.

[0002]

[Description of the Prior Art]Drawing 2 is a block diagram showing an example of the network for packet switching. Drawing 3 is an explanatory view showing the example of composition of a packet.

[0003]If the packet 20 which comprises a destination address, an originator address, and data is sent out to the relay station 25 in drawing 2 from two or more relay stations 16a-16c as shown in drawing 3 aiming at signal transduction via the communication lines 8a-8c, Out of the relay stations 17a-17c, the relay station 25 which received the packet 20 chooses from the destination address of each packet 20 the relay station which is the destination of each packet 20, and the packet 20, Via the communication lines 9a-9c in the circuit bunch 11 connected to the relay station 17a, the communication lines 10a-10c in the circuit bunch 12 connected to the relay station 17b, and the communication lines 18a-18c in the circuit bunch 19 connected to the relay station 17c. The network is constituted so that it may send out to the relay stations 17a-17c which are the destinations.

[0004]The conventional packet-switching relay system as indicated to JP,61-245663,A and JP,63-284949,A, With the destination address which receives a packet by the input part of the relay station corresponding to the communication line of each input side, passes the packet to a message-exchange part, and is added to the header unit of the packet in the message-exchange part. In order to choose the relay station of the partner who sends out a packet and to equalize circuit load out of two or more communication lines between the relay station, he chooses the communication line of an output side with least load one circuit among two or more communication lines between relay stations, and is trying to send out a packet.

[0005]Drawing 4 is a block diagram showing the composition of the relay station of the conventional packet-switching relay system. The composition of the relay station 25 of the conventional packet-

switching relay system shown in drawing 4, The input parts 26a-26c corresponding to the communication lines 8a-8c, and the outputting parts 3a-3c corresponding to the communication lines 9a-9c of the circuit bunch 11 of the communication line which is the relay station where the destination of the packet 20 is the same, The outputting parts 4a-4c corresponding to the communication lines 10a-10c of the circuit bunch 12, The relay station which should send out the packet 20 with the destination address in a packet is determined, and it comprises the message-exchange part 27 which passes the packet 20 to the outputting part which chooses one circuit as an output line from two or more communication lines further provided between destination relay stations, and corresponds. The destination relay station decision processing section 28 which determines the relay station where the message-exchange part 27 should send out the packet 20 with the destination address in the packet 20, It comprises the circuit selection processing parts 29a and 29b which pass the packet 20 to the outputting part which chooses one circuit as an output line from two or more communication lines provided between destination relay stations, and corresponds.

[0006]For example, this will be passed to the message-exchange part 27 if the input part 26a receives the packet 20 from the communication line 8a. The destination relay station decision processing section 28 in the message-exchange part 27 determines the relay station which should find out the destination address in the packet 20 passed from the input part 26a and to which a packet should be transmitted. The packet 20 which had the relay station of the destination determined is passed to either of the circuit selection processing parts 29a and 29b according to the relay station of the destination of a packet. For example, if the relay station 17a of the destination of the packet 20 is determined by the destination relay station decision processing section 28, it will be chosen as a communication line group for the circuit bunch 11 connected with the relay station 17a to send out the packet 20. The packet 20 will be passed to the circuit selection processing part 29a, when the relay station of the destination is determined and the circuit bunch 11 corresponding to the relay station determines. In the circuit selection processing part 29a, if it is determined whether to be sent out to which circuit in the circuit bunch 11, supposing it will be determined that it should be sent out, for example to the communication line 9a, the packet 20 will be passed to the outputting part 3a, and will be sent out to the circuit 9a from there.

[0007]

[Problem(s) to be Solved by the Invention]In order that all the packets may concentrate the conventional packet-switching relay system mentioned above on a message-exchange part, it becomes the increase in the load of a message-exchange part, and it has the fault that a throughput falls.

[0008]The purpose of this invention is to provide the packet-switching relay system which can carry out by the ability not performing transmission processing of a packet at one place, but distribute, and can raise a throughput.

[0009]

[Means for Solving the Problem]A packet-switching relay system of this invention determines a relay station of the destination of said packet based on a destination address of a packet which received via two or more communication lines of an input side, respectively, In a packet-switching relay system

which furthermore chooses a communication line with little load among two or more communication lines between said relay stations, and equalizes and uses output load of said packet in two or more communication lines between said relay stations, A relay station of the destination of said packet is determined, and it has two or more means to choose a communication line with little load among said communication lines, and is constituted.

[0010]A packet-switching relay system of this invention comprises:

A relay station of the destination of said packet is determined based on a destination address of a packet which received via two or more communication lines of an input side, respectively, In a packet-switching relay system which furthermore chooses a communication line with little load among two or more communication lines between said relay stations, and equalizes and uses output load of said packet in two or more communication lines between said relay stations, A relay station of the destination of said packet is determined based on a destination address of a packet which received from a communication line of said input side, A destination relay station decision processing means by which two or more preparations and said message-exchange means determine a relay station of the destination of said packet for a message-exchange means to choose a communication line with little load among two or more communication lines between said relay stations furthermore, based on a destination address of said packet which received.

A circuit selection processing means which chooses a communication line with little load among two or more communication lines between said relay stations.

[0011]As for the number of said message-exchange means, a packet-switching relay system of this invention is constituted as there is only the number of two or more communication lines of an input side.

[0012]

[Embodiment of the Invention]Next, an embodiment of the invention is described with reference to drawings.

[0013]Drawing 1 is a block diagram showing one gestalt of operation of the packet-switching relay system of this invention.

[0014]The packet-switching relay system of this embodiment shown in drawing 1, Based on the destination address of the packet 20 which received from the communication lines 8a-8c of the input side, The relay station of the destination of the packet 20 in the relay station connected to the circuit bunch 11 which comprises the communication lines 9a-9c which are two or more output lines. Or it determines whether to be the relay station connected to the circuit bunch 12 which comprises the communication lines 10a-10c, Two or more message-exchange parts 2a-2c which furthermore choose one circuit of communication lines with little load among two or more communication lines 9a-9c between the relay station, and the communication lines 10a-10c, The outputting parts 3a-3c which each is connected with the message-exchange parts 2a-2c, and are connected to either of the communication lines 9a-9c which are two or more output lines, It has the outputting parts 4a-4c which each is connected with the message-exchange parts 2a-2c, and are connected to either of the communication lines 10a-10c which are two or more output lines, and is constituted.

[0015]The input part 7 in which the message-exchange part 2a receives the packet 20 from the communication line 8a of an input side, The destination relay station decision processing section 5 which determines the relay station of the destination of the packet based on the destination address of the packet 20 which received, two or more communication lines 9a-9c between the determined relay stations -- or it has the circuit selection processing parts 6a and 6b which choose a communication line with least load among the communication lines 10a-10c, and is constituted. In drawing 1, the composition inside a block of message-exchange part 2b - 2c is constituted like [the inside of message-exchange part 2b - 2c] the inside of the message-exchange part 2a, although not illustrated. That is, message-exchange part 2b was provided with the input part which receives the packet 20 from the communication line 8b of an input side, and the message-exchange part 2c is provided with the input part which receives the packet 20 from the communication line 8c of an input side. message-exchange part 2b and 2c -- connection with each of two circuit selection processing parts, communication lines 9a-9c, and the communication lines 10a-10c is the same as that of the case of the message-exchange part 2a.

[0016]Next, operation is explained.

[0017]In drawing 1, the packet 20 should be received from the communication line 8a in the relay station 1. It is received by the input part 7 of the message-exchange part 2a, and after this packet 20 is changed into the signal format of the office of the relay station 1 from the signal format in the communication line 8a, it is outputted to the destination relay station decision processing section 5. Although the destination relay station decision processing section 5 determines the relay station of the destination of the packet 20 based on the destination address of the packet 20 which received, Supposing it is determined that the relay station where the circuit bunch 11 is connected is a relay station of the destination of the packet 20 here, It is reported that the communication line used for transmitting the packet 20 from the destination relay station decision processing section 5 to the circuit selection processing part 6a is chosen from the communication lines 9a-9c in the circuit bunch 11. The circuit selection processing part 6a so that the output load of each packet 20 of the communication lines 9a-9c between the relay stations determined by the destination relay station decision processing section 5 may be equalized, Supposing the communication line 9b is chosen as fewest communication lines of load among the communication lines 9a-9c, The circuit selection processing part 6a connects the input of the outputting part 3b to which the destination relay station decision processing section 5 outputs, and the communication line 9b is connected, and constitutes the transfer route of the packet 20 accumulated in the destination relay station decision processing section 5. In order that the circuit selection processing part 6a may choose fewest communication lines of load among the communication lines 9a-9c so that the output load of each packet 20 of the communication lines 9a-9c may be equalized, Actual results data when transmission of the packet 20 is performed is recorded, and it constitutes so that it may choose based on the data. the packet 20 received now from the communication line 8a passes the communication line 9b from the outputting part 3b -- the next relay station -- it is transmitted. When the destination relay station decision processing section 5 determines the relay station of the destination of the packet 20 based on the destination address of the packet 20 which received, Supposing it is determined that the relay station

where the circuit bunch 12 is connected is a relay station of the destination of the packet 20, It is reported that the communication line used for transmitting the packet 20 from the destination relay station decision processing section 5 to the circuit selection processing part 6b is chosen from the communication lines 10a-10c in the circuit bunch 12.

[0018]The outputting parts 3a-3c to which the communication lines 9a-9c in the circuit bunch 11 are connected, Since the packet 20 which is connected also to message-exchange part 2b and 2c, respectively, and was received from the communication lines 8b and 8c is transmitted via the communication lines 9a-9c, In actual results data when transmission of the packet 20 recorded on the circuit selection processing part 6a of the message-exchange part 2a is performed, Actual results data when transmitted by the circuit selection processing part 6a of message-exchange part 2b via the communication lines 9a-9c, Or although actual results data when transmitted by the circuit selection processing part 6a of the message-exchange part 2c via the communication lines 9a-9c is not contained, Since the output load of each packet 20 of the communication lines 9a-9c is equalized by the circuit selection processing part 6a of the message-exchange parts 2a-2c, Since the output load of the packet 20 will be equalized if it sees in a long period of time even if that the output load of the packet 20 is not equalized will start, if it sees for a short time, It is satisfactory even if it does not notify not each other's actual results data when transmission of the packet 20 is performed between the circuit selection processing parts 6a of the message-exchange parts 2a-2c mutually.

[0019]By the above-mentioned explanation, in order that the number of circuit between the relay stations of an input side may explain simply, it expresses with one circuit, but the number of circuit of an input side may be a multiple-line.

[0020]When two or more message-exchange parts determine the relay station of the destination of the packet 20 by an input side and a communication line with little load is further chosen among two or more communication lines between relay stations, two or more message-exchange parts can choose the same outputting part as identical time, but. It is necessary to attach and process a priority by that outputting part by the method which was able to determine beforehand the packet 20 from two or more message-exchange parts at this time. That is, the low-priority packet 20 is memorized in the memory, and when transmitting the packet 20 transmitted previously, it reads from the high thing of a priority among the packets 20 memorized in the memory, and is made to transmit one by one.

[0021]

[Effect of the Invention]As explained above, the packet-switching relay system of this invention, By forming two or more message-exchange means to perform transmission processing of a packet, corresponding to the number of the communication lines of an input, and having processed them in parallel by two or more of these message-exchange means, It can carry out by not performing transmission processing of a packet at one place, but distributing, and has the effect that a throughput can be raised.

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TECHNICAL FIELD

[Field of the Invention]This invention relates to the packet-switching relay system which chooses an output line so that the frequency in use of each circuit may be equalized, when especially between relay stations comprises two or more circuits about a packet-switching relay system.

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PRIOR ART

[Description of the Prior Art]Drawing 2 is a block diagram showing an example of the network for packet switching. Drawing 3 is an explanatory view showing the example of composition of a packet. [0003] If the packet 20 which comprises a destination address, an originator address, and data is sent out to the relay station 25 in drawing 2 from two or more relay stations 16a-16c as shown in drawing 3 aiming at signal transduction via the communication lines 8a-8c, Out of the relay stations 17a-17c, the relay station 25 which received the packet 20 chooses from the destination address of each packet 20 the relay station which is the destination of each packet 20, and the packet 20, Via the communication lines 9a-9c in the circuit bunch 11 connected to the relay station 17a, the communication lines 10a-10c in the circuit bunch 12 connected to the relay station 17b, and the communication lines 18a-18c in the circuit bunch 19 connected to the relay station 17c. The network is constituted so that it may send out to the relay stations 17a-17c which are the destinations. [0004] The conventional packet-switching relay system as indicated to JP,61-245663,A and JP,63-284949,A, With the destination address which receives a packet by the input part of the relay station corresponding to the communication line of each input side, passes the packet to a message-exchange part, and is added to the header unit of the packet in the message-exchange part. In order to choose the relay station of the partner who sends out a packet and to equalize circuit load out of two or more communication lines between the relay station, he chooses the communication line of an output side with least load one circuit among two or more communication lines between relay stations, and is trying to send out a packet. [0005] Drawing 4 is a block diagram showing the composition of the relay station of the conventional packet-switching relay system. The composition of the relay station 25 of the conventional packet-switching relay system shown in drawing 4, The input parts 26a-26c corresponding to the communication lines 8a-8c, and the outputting parts 3a-3c corresponding to the communication lines 9a-9c of the circuit bunch 11 of the communication line which is the relay station where the destination of the packet 20 is the same, The outputting parts 4a-4c corresponding to the communication lines 10a-10c of the circuit bunch 12, The relay station which should send out the packet 20 with the destination address in a packet is determined, and it comprises the message-

exchange part 27 which passes the packet 20 to the outputting part which chooses one circuit as an output line from two or more communication lines further provided between destination relay stations, and corresponds. The destination relay station decision processing section 28 which determines the relay station where the message-exchange part 27 should send out the packet 20 with the destination address in the packet 20, It comprises the circuit selection processing parts 29a and 29b which pass the packet 20 to the outputting part which chooses one circuit as an output line from two or more communication lines provided between destination relay stations, and corresponds.

[0006]For example, this will be passed to the message-exchange part 27 if the input part 26a receives the packet 20 from the communication line 8a. The destination relay station decision processing section 28 in the message-exchange part 27 determines the relay station which should find out the destination address in the packet 20 passed from the input part 26a and to which a packet should be transmitted. The packet 20 which had the relay station of the destination determined is passed to either of the circuit selection processing parts 29a and 29b according to the relay station of the destination of a packet. For example, if the relay station 17a of the destination of the packet 20 is determined by the destination relay station decision processing section 28, it will be chosen as a communication line group for the circuit bunch 11 connected with the relay station 17a to send out the packet 20. The packet 20 will be passed to the circuit selection processing part 29a, when the relay station of the destination is determined and the circuit bunch 11 corresponding to the relay station determines. In the circuit selection processing part 29a, if it is determined whether to be sent out to which circuit in the circuit bunch 11, supposing it will be determined that it should be sent out, for example to the communication line 9a, the packet 20 will be passed to the outputting part 3a, and will be sent out to the circuit 9a from there.

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EFFECT OF THE INVENTION

[Effect of the Invention]As explained above, the packet-switching relay system of this invention, By forming two or more message-exchange means to perform transmission processing of a packet, corresponding to the number of the communication lines of an input, and having processed them in parallel by two or more of these message-exchange means, It can carry out by not performing transmission processing of a packet at one place, but distributing, and has the effect that a throughput can be raised.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]In order that all the packets may concentrate the conventional packet-switching relay system mentioned above on a message-exchange part, it becomes the increase in the load of a message-exchange part, and it has the fault that a throughput falls.

[0008]The purpose of this invention is to provide the packet-switching relay system which can carry out by the ability not performing transmission processing of a packet at one place, but distribute, and can raise a throughput.

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MEANS

[Means for Solving the Problem]A packet-switching relay system of this invention determines a relay station of the destination of said packet based on a destination address of a packet which received via two or more communication lines of an input side, respectively, In a packet-switching relay system which furthermore chooses a communication line with little load among two or more communication lines between said relay stations, and equalizes and uses output load of said packet in two or more communication lines between said relay stations, A relay station of the destination of said packet is determined, and it has two or more means to choose a communication line with little load among said communication lines, and is constituted.

[0010]A packet-switching relay system of this invention comprises:

A relay station of the destination of said packet is determined based on a destination address of a packet which received via two or more communication lines of an input side, respectively, In a packet-switching relay system which furthermore chooses a communication line with little load among two or more communication lines between said relay stations, and equalizes and uses output load of said packet in two or more communication lines between said relay stations, A relay station of the destination of said packet is determined based on a destination address of a packet which received from a communication line of said input side, A destination relay station decision processing means by which two or more preparations and said message-exchange means determine a relay station of the destination of said packet for a message-exchange means to choose a communication line with little load among two or more communication lines between said relay stations furthermore, based on a destination address of said packet which received.

A circuit selection processing means which chooses a communication line with little load among two or more communication lines between said relay stations.

[0011]As for the number of said message-exchange means, a packet-switching relay system of this invention is constituted as there is only the number of two or more communication lines of an input side.

[0012]

[Embodiment of the Invention]Next, an embodiment of the invention is described with reference to drawings.

[0013]Drawing 1 is a block diagram showing one gestalt of operation of the packet-switching relay system of this invention.

[0014]The packet-switching relay system of this embodiment shown in drawing 1, Based on the destination address of the packet 20 which received from the communication lines 8a-8c of the input side, The relay station of the destination of the packet 20 in the relay station connected to the circuit bunch 11 which comprises the communication lines 9a-9c which are two or more output lines. Or it determines whether to be the relay station connected to the circuit bunch 12 which comprises the communication lines 10a-10c, Two or more message-exchange parts 2a-2c which furthermore choose one circuit of communication lines with little load among two or more communication lines 9a-9c between the relay station, and the communication lines 10a-10c, The outputting parts 3a-3c which each is connected with the message-exchange parts 2a-2c, and are connected to either of the communication lines 9a-9c which are two or more output lines, It has the outputting parts 4a-4c which each is connected with the message-exchange parts 2a-2c, and are connected to either of the communication lines 10a-10c which are two or more output lines, and is constituted.

[0015]The input part 7 in which the message-exchange part 2a receives the packet 20 from the communication line 8a of an input side, The destination relay station decision processing section 5 which determines the relay station of the destination of the packet based on the destination address of the packet 20 which received, two or more communication lines 9a-9c between the determined relay stations -- or it has the circuit selection processing parts 6a and 6b which choose a communication line with least load among the communication lines 10a-10c, and is constituted. In drawing 1, the composition inside a block of message-exchange part 2b - 2c is constituted like [the inside of message-exchange part 2b - 2c] the inside of the message-exchange part 2a, although not illustrated. That is, message-exchange part 2b was provided with the input part which receives the packet 20 from the communication line 8b of an input side, and the message-exchange part 2c is provided with the input part which receives the packet 20 from the communication line 8c of an input side. message-exchange part 2b and 2c -- connection with each of two circuit selection processing parts, communication lines 9a-9c, and the communication lines 10a-10c is the same as that of the case of the message-exchange part 2a.

[0016]Next, operation is explained.

[0017]In drawing 1, the packet 20 should be received from the communication line 8a in the relay station 1. It is received by the input part 7 of the message-exchange part 2a, and after this packet 20 is changed into the signal format of the office of the relay station 1 from the signal format in the communication line 8a, it is outputted to the destination relay station decision processing section 5. Although the destination relay station decision processing section 5 determines the relay station of the destination of the packet 20 based on the destination address of the packet 20 which received, Supposing it is determined that the relay station where the circuit bunch 11 is connected is a relay station of the destination of the packet 20 here, It is reported that the communication line used for transmitting the packet 20 from the destination relay station decision processing section 5 to the

circuit selection processing part 6a is chosen from the communication lines 9a-9c in the circuit bunch 11. The circuit selection processing part 6a so that the output load of each packet 20 of the communication lines 9a-9c between the relay stations determined by the destination relay station decision processing section 5 may be equalized, Supposing the communication line 9b is chosen as fewest communication lines of load among the communication lines 9a-9c, The circuit selection processing part 6a connects the input of the outputting part 3b to which the destination relay station decision processing section 5 outputs, and the communication line 9b is connected, and constitutes the transfer route of the packet 20 accumulated in the destination relay station decision processing section 5. In order that the circuit selection processing part 6a may choose fewest communication lines of load among the communication lines 9a-9c so that the output load of each packet 20 of the communication lines 9a-9c may be equalized, Actual results data when transmission of the packet 20 is performed is recorded, and it constitutes so that it may choose based on the data. the packet 20 received now from the communication line 8a passes the communication line 9b from the outputting part 3b -- the next relay station -- it is transmitted. When the destination relay station decision processing section 5 determines the relay station of the destination of the packet 20 based on the destination address of the packet 20 which received, Supposing it is determined that the relay station where the circuit bunch 12 is connected is a relay station of the destination of the packet 20, It is reported that the communication line used for transmitting the packet 20 from the destination relay station decision processing section 5 to the circuit selection processing part 6b is chosen from the communication lines 10a-10c in the circuit bunch 12.

[0018]The outputting parts 3a-3c to which the communication lines 9a-9c in the circuit bunch 11 are connected, Since the packet 20 which is connected also to message-exchange part 2b and 2c, respectively, and was received from the communication lines 8b and 8c is transmitted via the communication lines 9a-9c, In actual results data when transmission of the packet 20 recorded on the circuit selection processing part 6a of the message-exchange part 2a is performed, Actual results data when transmitted by the circuit selection processing part 6a of message-exchange part 2b via the communication lines 9a-9c, Or although actual results data when transmitted by the circuit selection processing part 6a of the message-exchange part 2c via the communication lines 9a-9c is not contained, Since the output load of each packet 20 of the communication lines 9a-9c is equalized by the circuit selection processing part 6a of the message-exchange parts 2a-2c, Since the output load of the packet 20 will be equalized if it sees in a long period of time even if that the output load of the packet 20 is not equalized will start, if it sees for a short time, It is satisfactory even if it does not notify not each other's actual results data when transmission of the packet 20 is performed between the circuit selection processing parts 6a of the message-exchange parts 2a-2c mutually.

[0019]By the above-mentioned explanation, in order that the number of circuit between the relay stations of an input side may explain simply, it expresses with one circuit, but the number of circuit of an input side may be a multiple-line.

[0020]When two or more message-exchange parts determine the relay station of the destination of the packet 20 by an input side and a communication line with little load is further chosen among two or more communication lines between relay stations, two or more message-exchange parts can

choose the same outputting part as identical time, but. It is necessary to attach and process a priority by that outputting part by the method which was able to determine beforehand the packet 20 from two or more message-exchange parts at this time. That is, the low-priority packet 20 is memorized in the memory, and when transmitting the packet 20 transmitted previously, it reads from the high thing of a priority among the packets 20 memorized in the memory, and is made to transmit one by one.

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.*** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a block diagram showing one gestalt of operation of the packet-switching relay system of this invention.

[Drawing 2]It is a block diagram showing an example of the network for packet switching.

[Drawing 3]It is an explanatory view showing the example of composition of a packet.

[Drawing 4]It is a block diagram showing the composition of the relay station of the conventional packet-switching relay system.

[Description of Notations]

1 Relay station

2a-2c Message-exchange part

3a-3c Outputting part

4a-4c Outputting part

5 Destination relay station decision processing section

6a and 6b Circuit selection processing part

7 Input part

9a-9c Communication line

10a-10c Communication line

11 and 12 Circuit bunch

[Translation done.]

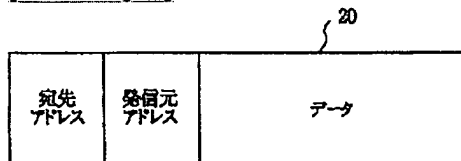
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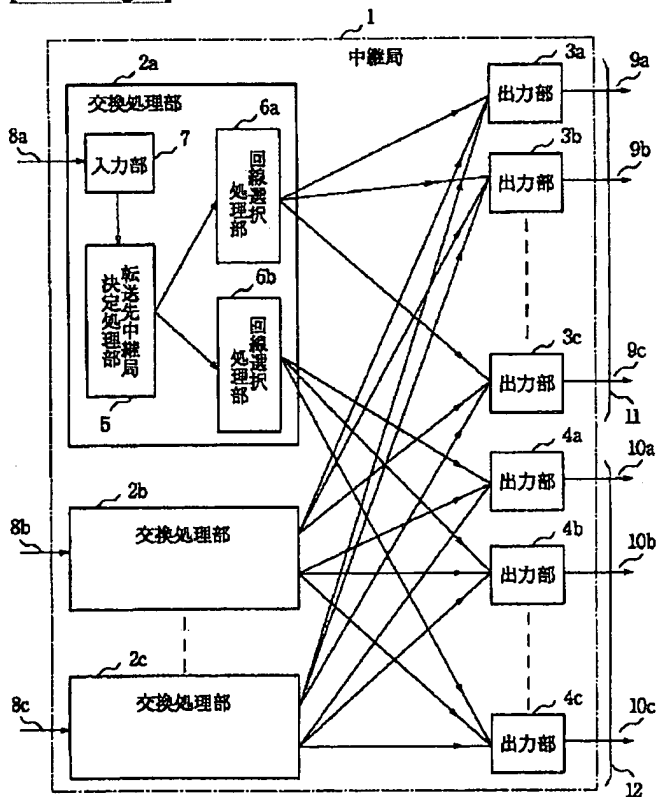
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DRAWINGS

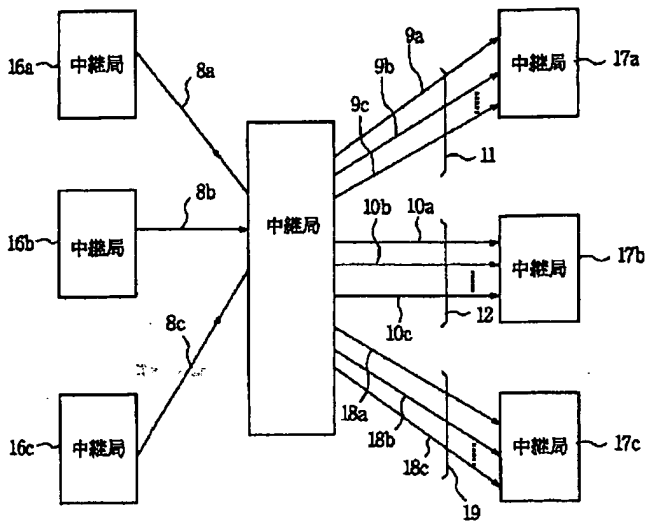
[Drawing 3]



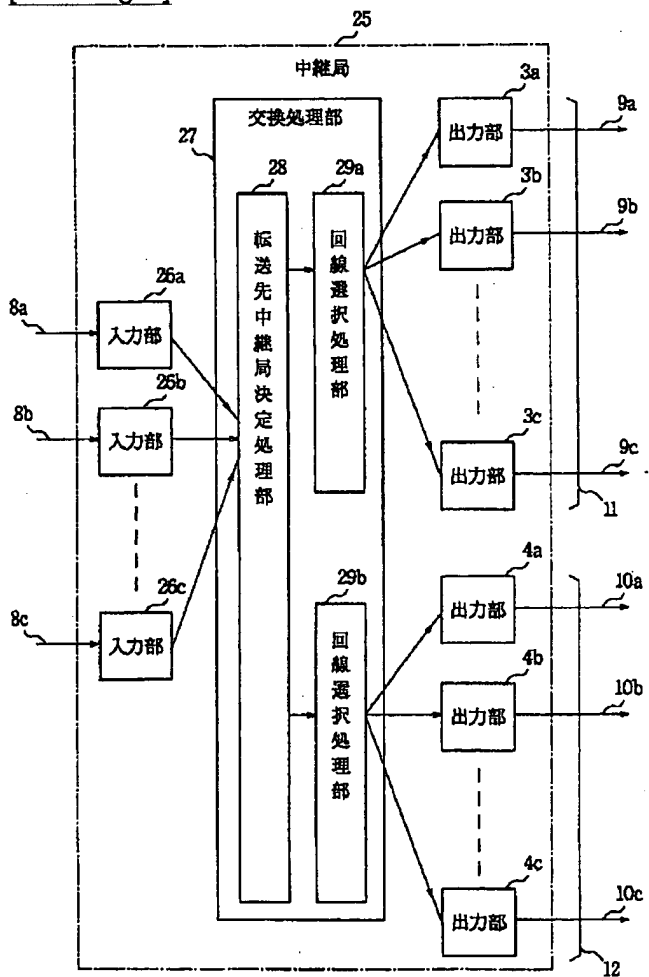
[Drawing 1]



[Drawing 2]



[Drawing 4]



[Translation done.]